

2025 RELEASE UNDER E.O. 14176

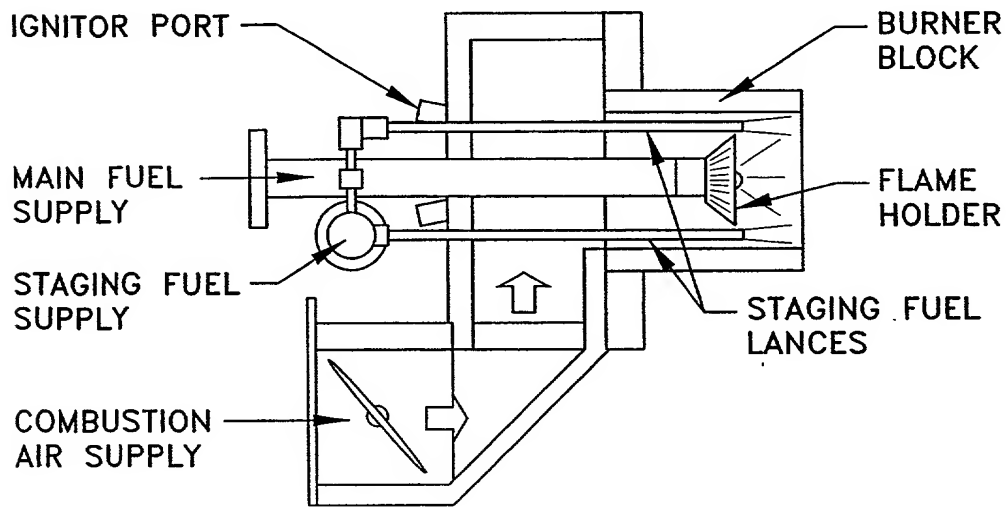


FIG. 1
(PRIOR ART)

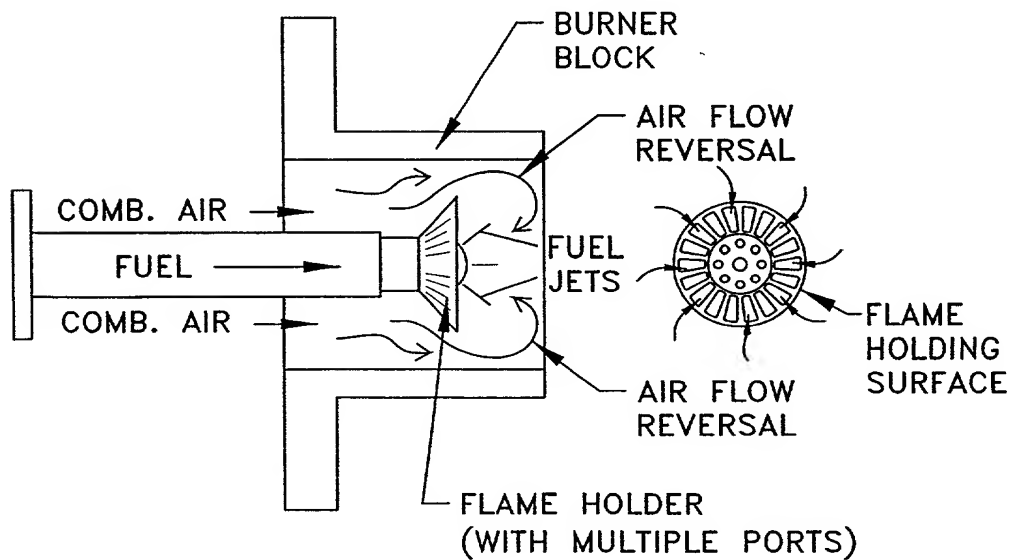


FIG. 2
(PRIOR ART)

FIG. 3

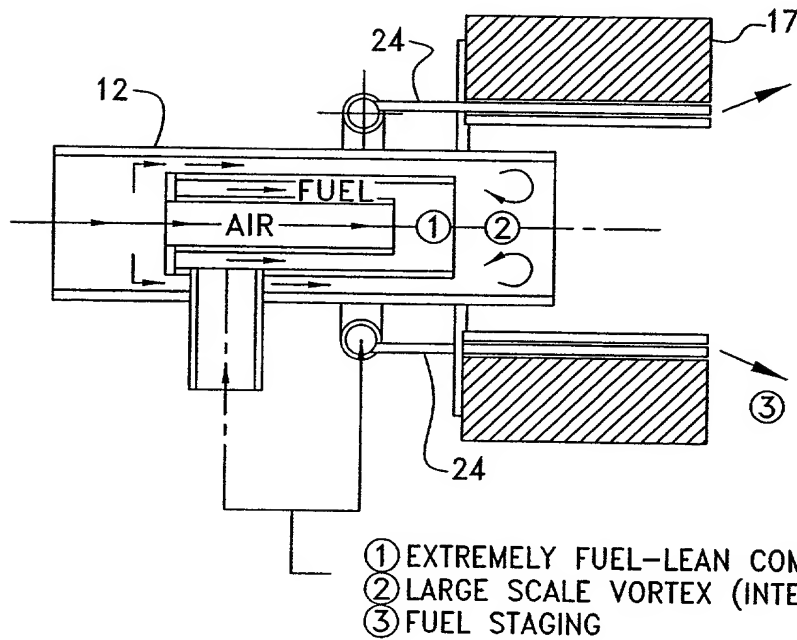
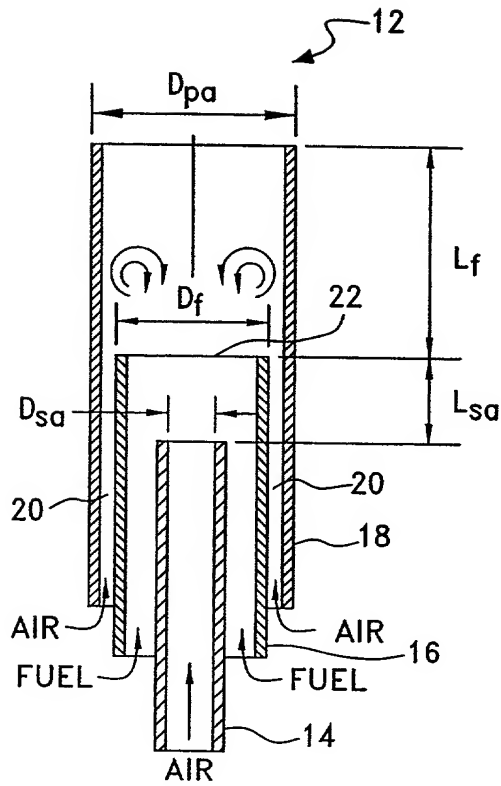


FIG. 5A

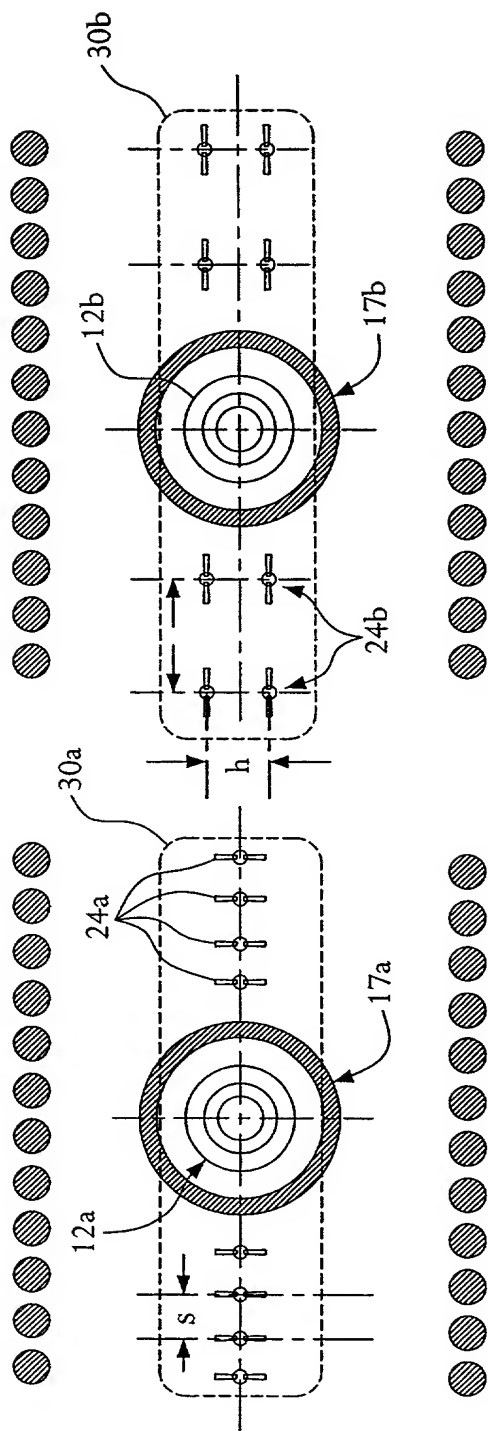


FIG. 5C

FIG. 5B

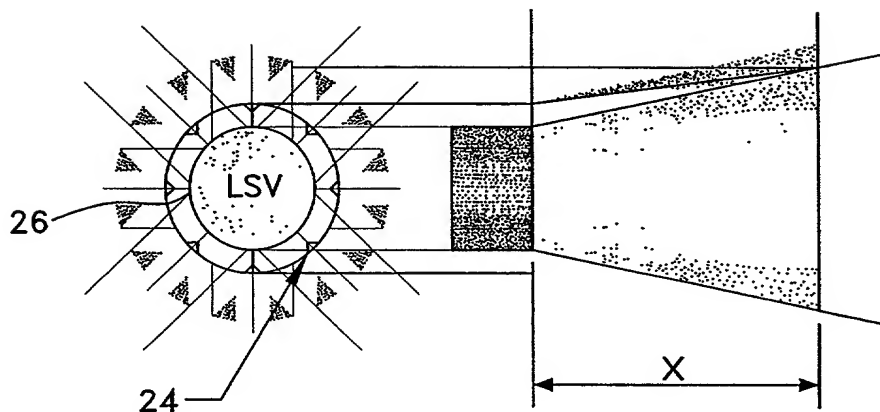


FIG. 6

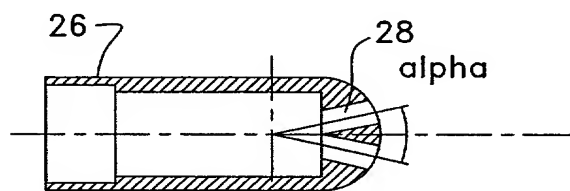


FIG. 7A

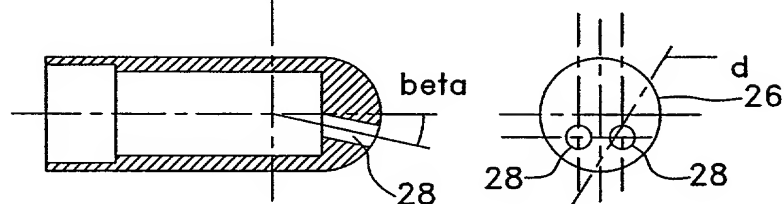


FIG. 7B

FIG. 7C

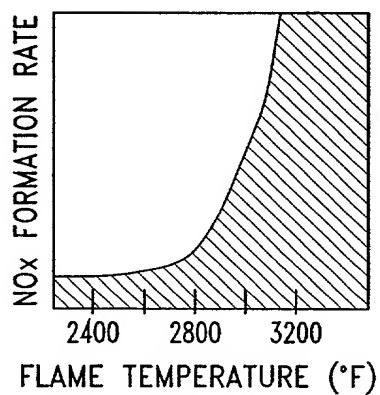


FIG. 4A

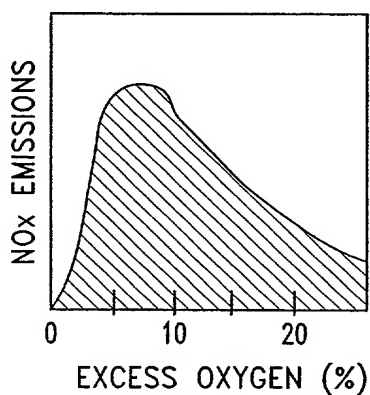


FIG. 4B

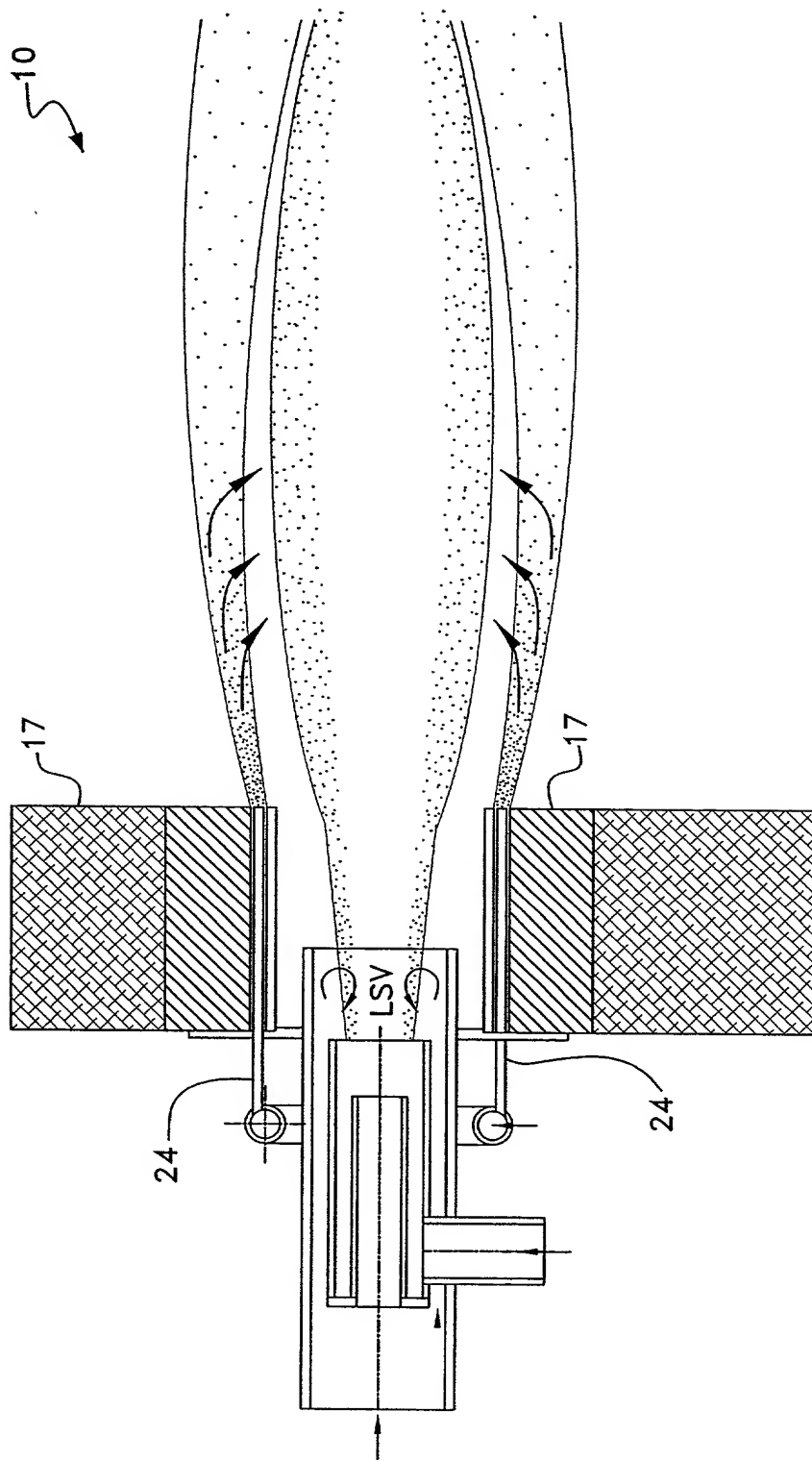


Fig. 8

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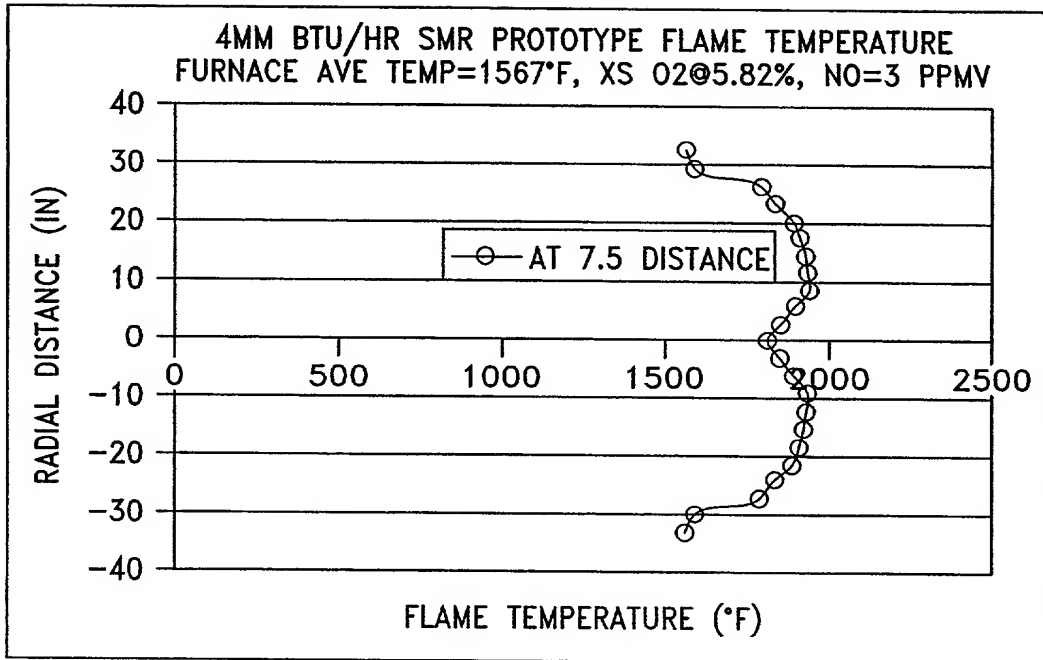


FIG. 10

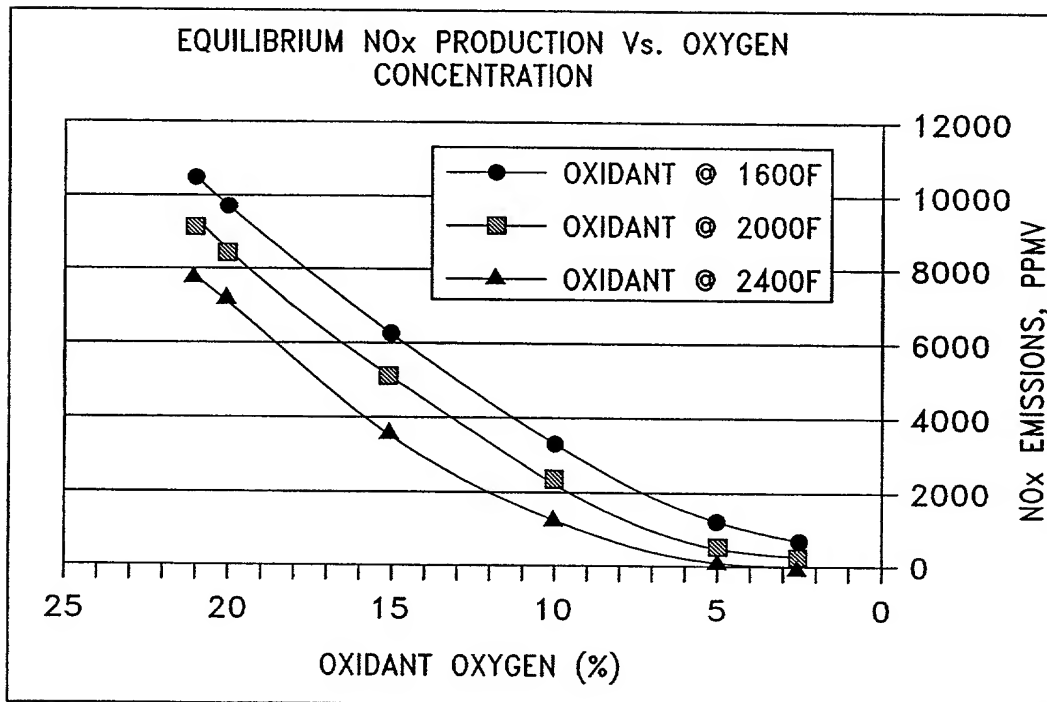


FIG. 9

Vertical Plane pointed to LSV

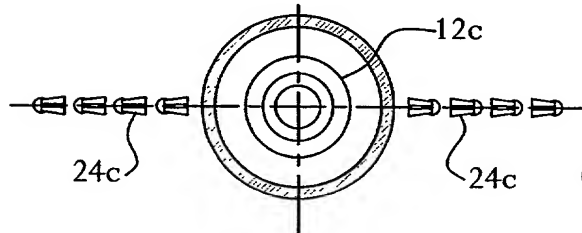


FIG. 11A

Firing Rate: 4 MM Btu/Hr
 Fuel Lances: 8, 2 holes/lance
 0.1094" ϕ , 15°/7°
 Fuel Prs: 4.75 psig; Air: 1.6 iwc
 Furnace Temp ~ 1499°F:
 O₂=1.8%, CO=10ppm, NO=5 ppmv

Vertical Plane pointed to LSV

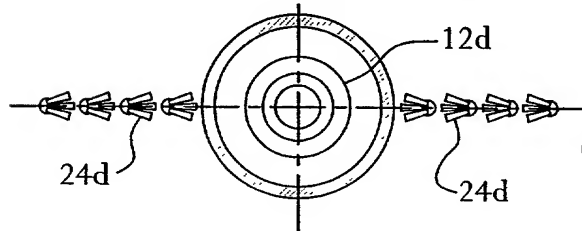


FIG. 11B

Firing Rate: 4 MM Btu/Hr
 Fuel Lances: 8, 3 holes/lance, 0.14,
 0.094" ϕ , 20°/7°/12°
 Fuel Prs: 3 psig; Air: 1.6 iwc
 Furnace Temp ~ 1566°F:
 O₂=1.0%, CO=20ppm, NO=6 ppmv

Inclined Plane Straight Out

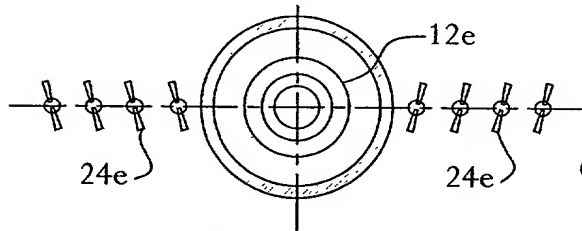


FIG. 11C

Firing Rate: 4 MM Btu/Hr
 Fuel Lances: 8, 2 holes/lance
 0.1096" ϕ , 15°, 20° inclin
 Fuel Prs: 5 psig; Air: 1.6 iwc
 Furnace Temp ~ 1500°F:
 O₂=2.1%, CO=200ppm, NO=5 ppmv

Vertical Plane + Circular

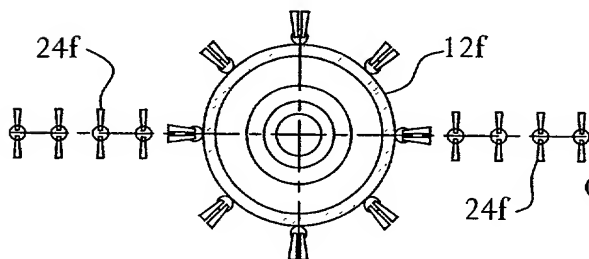


FIG. 11D

Firing Rate: 4 MM Btu/Hr
 Fuel Lances: 16, 2 holes/lance
 0.1096" ϕ , 7°, 15°
 Fuel Prs: 2.5 psig; Air: 1.6 iwc
 Furnace Temp ~ 1498°F:
 O₂=1.5%, CO=25ppm, NO=6.5 ppmv

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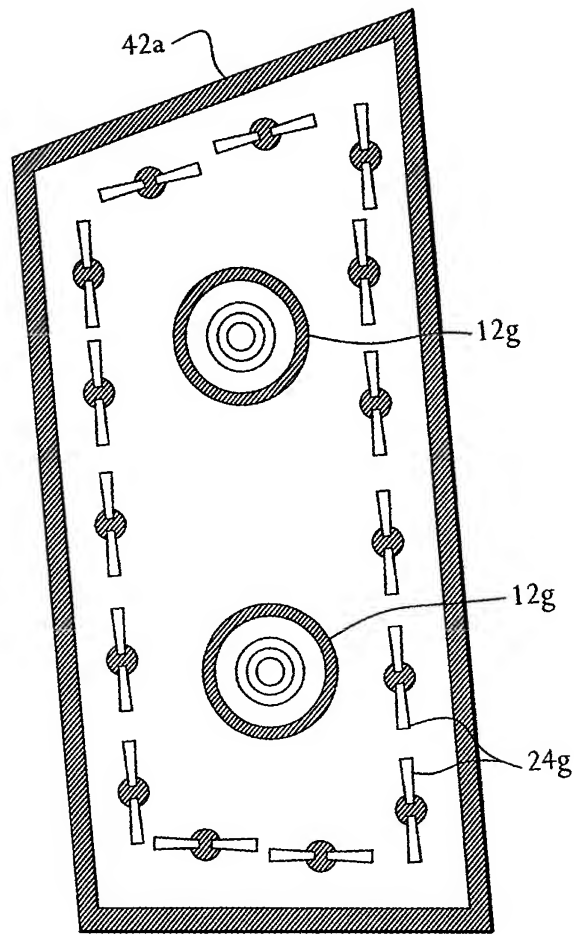


FIG. 12A

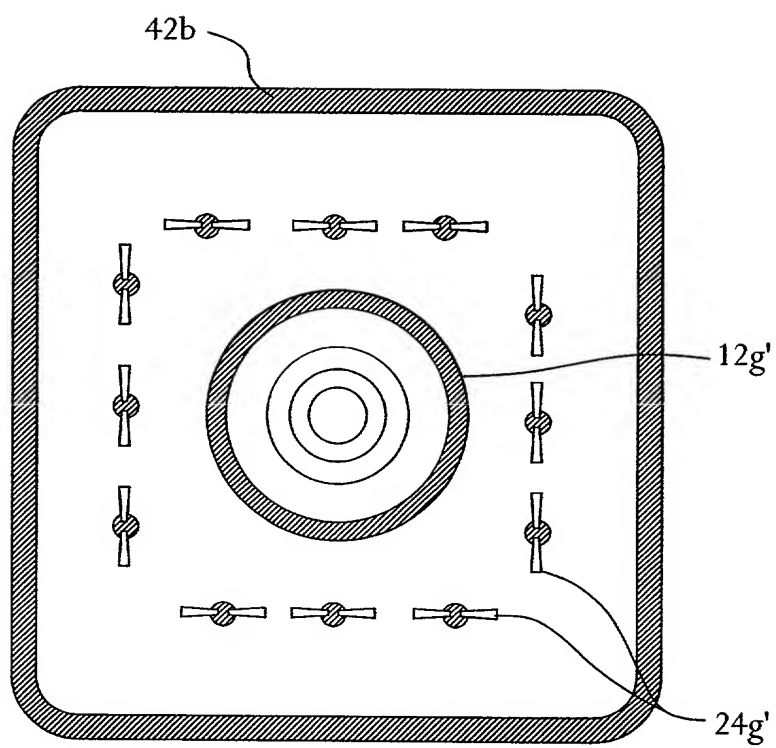


FIG. 12B

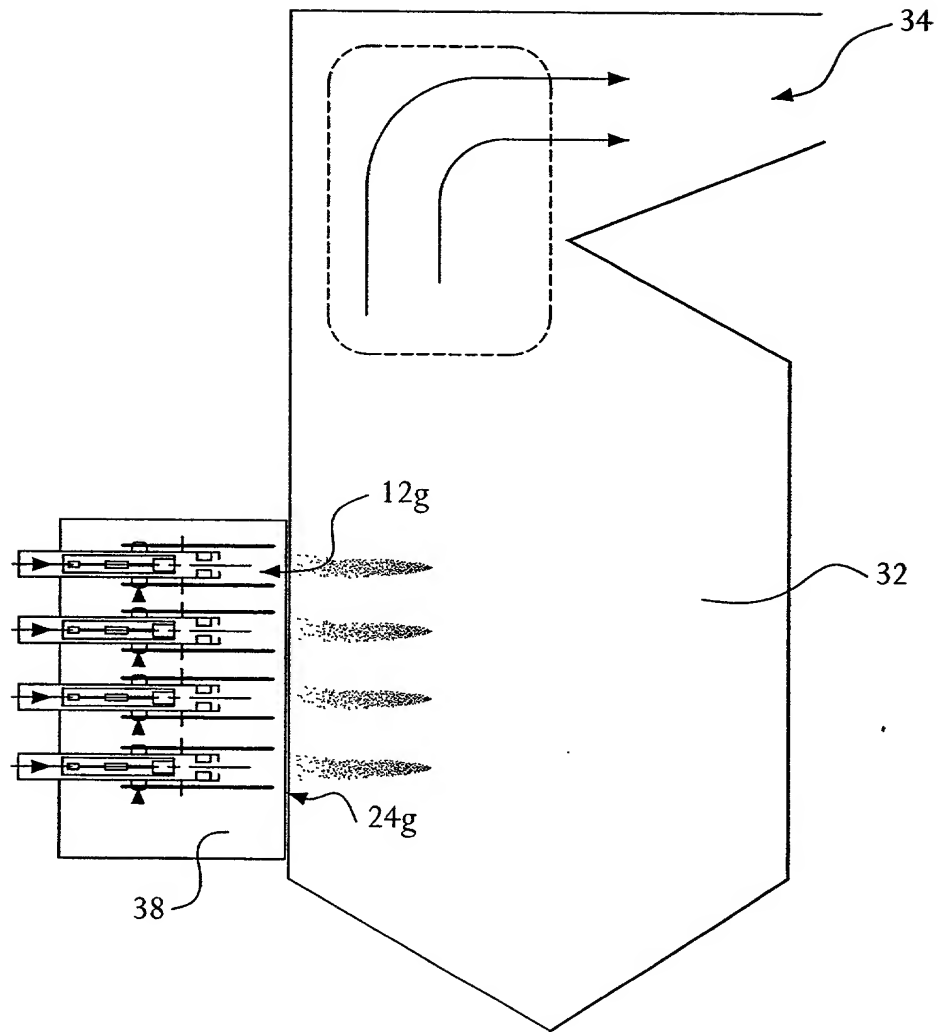


FIG. 13A

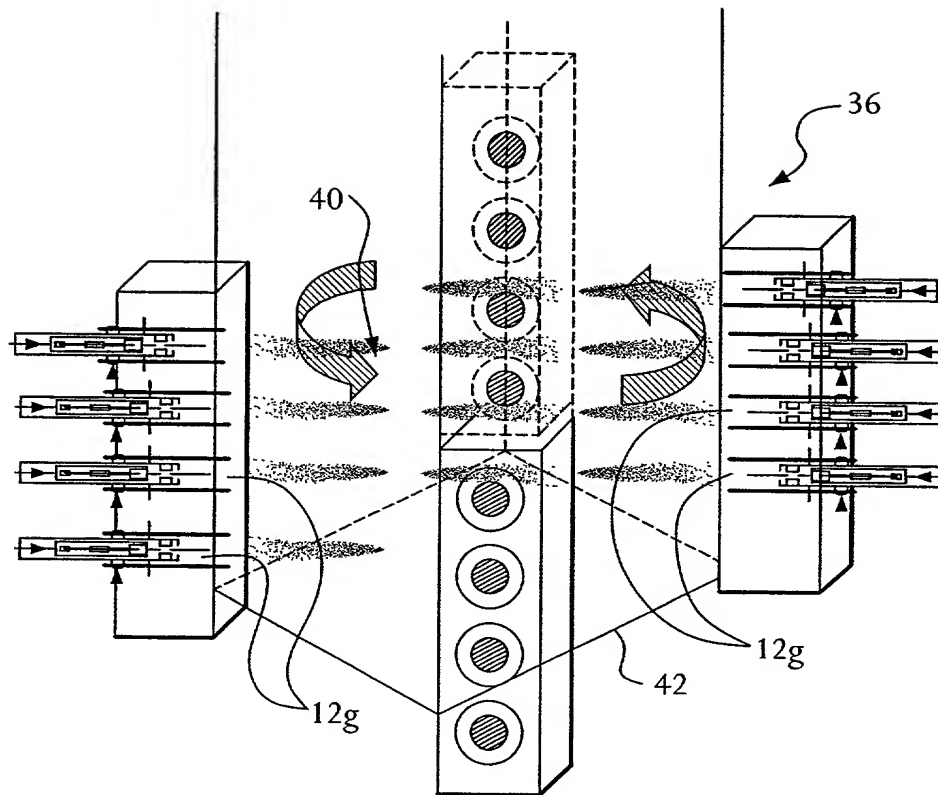


FIG. 13B